

WHAT IS CLAIMED IS:

1. A current generator providing an output current comprising:
 - a first current limiter coupled between an input current and the output current, the first current limiter generating a first current having a maximum value of a first limit;
 - a second current limiter coupled between the input current and the output current, the second current limiter generating a second current having a maximum value of a second limit; and
 - a node coupled to the first current limiter and the second current limiter wherein the output current is the sum of the first current and the second current.
2. The current generator of claim 1 wherein the first current limiter includes a first current source.
3. The current generator of claim 2 wherein the first current limiter is programmable.
4. The current generator of claim 1 wherein the current generator is coupled to a power amplifier driver.
5. The current generator of claim 4 wherein an offset is added to the output of the current generator.
6. The current generator of claim 1 wherein the first current limiter includes a second current source and a third current source.

7. The current generator of claim 6 wherein the second and third current sources generate substantially equal currents.
8. The current generator of claim 1 wherein the second current limiter includes a fourth current source.
9. The current generator of claim 1 wherein the first current limiter includes a second source and a third current source, wherein the second current limiter includes a fourth current source.
10. The current generator of claim 9 wherein the second current source and the third current source are less than the fourth current source.
11. The current generator of claim 9 wherein the second current source and the third current source are greater than the fourth current source.

12. A current generator providing an output current comprising:
 - an input mirror having a first current source, a second current source, a first transistor, and a second transistor, the first current source being a variable input current source, the first transistor outputting a first mirror current source of the variable current source limited by the first current source, and the second transistor outputting a second mirror current source of the variable current source limited by the second current source;
 - a first current limiter having a third current source and one or more transistors, the first current limiter coupled to the first transistor of the input mirror and having a third transistor outputting a first current output substantially equivalent to the variable input current source limited by the third current source;
 - a second current limiter having a fourth current source and one or more transistors, the second current limiter coupled to the second transistor of the input mirror and having a fourth transistor outputting a second current substantially equivalent to the first current source limited by the second current source; and
 - a node coupled to the first current limiter and the second current limiter wherein the output current is the sum of the first current and the second current.
13. The current generator of claim 12 wherein the second current source is substantially equivalent to the third current source.
14. The current generator of claim 12 wherein the current generator is coupled to a power amplifier driver.
15. The current generator of claim 14 wherein an offset is added to the output of the current generator.

16. The current generator of claim 12 wherein the second and third current sources generate substantially equal currents and are less than the fourth current source.
17. The current generator of claim 12 wherein the second and third current sources generate substantially equal currents and are greater than the fourth current source.
18. The current generator of claim 12 wherein the second current source is programmable.
19. The current generator of claim 12 wherein the third current source is programmable.
20. The current generator of claim 12 wherein the fourth current source is programmable.

21. A current generator providing an output current comprising:

an input circuit having a first current source, a second current source, a first transistor, and a second transistor, the input circuit coupled to a positive input voltage and a voltage feedback, current flowing through the first transistor changing exponentially in inverse relation to the positive input voltage and limited by the second current source;

the first current source being a variable current source and the second current source being a constant current source, the first transistor and the second transistor outputting a mirror current of the variable current source with respect to the second current source;

a first current limiter having a third constant current source and one or more transistors, the first current limiter coupled to the first transistor of the input mirror and having a third transistor outputting a first current output substantially equivalent to the variable input current source clipped at the current level defined by the second constant current source;

a second current limiter having a third constant current source and one or more transistors, the first current limiter coupled to the first transistor of the input mirror and having a third transistor outputting a first current output substantially equivalent to the variable input current source clipped at the current level defined by the second constant current source; and

a node coupled to the output of the first current limiter and the output of the second current limiter, outputting a linear-in-dB current.

22. The current generator of claim 21 wherein the second current source is substantially equivalent to the third current source.

23. The current generator of claim 21 wherein the current generator is coupled to a power amplifier driver.
24. The current generator of claim 23 wherein an offset is added to the output of the current generator.
25. The current generator of claim 21 wherein the second and third current sources generate substantially equal currents and are less than the fourth current source.
26. The current generator of claim 21 wherein the second and third current sources generate substantially equal currents and are greater than the fourth current source.
27. The current generator of claim 21 wherein the second current source is programmable.
28. The current generator of claim 21 wherein the third current source is programmable.
29. The current generator of claim 21 wherein the fourth current source is programmable.

30. A method of limiting an input current, the method comprising the steps of:
 - providing a first current;
 - limiting the first current to a first limit creating a first output current;
 - limiting the first current to a second limit creating a second output current; and
 - summing the first output current and the second output current to create an output current.
31. The method of claim 30 wherein the step of limiting the first current to create a first output current is performed by limiting a current flow through a transistor to the first limit.
32. The method of claim 31 wherein the gate of the transistor is electrically coupled to a constant current source.
33. The method of claim 32 wherein the constant current source is the first limit.
34. The method of claim 30 wherein the step of limiting the first current to create a second output current is performed by limiting a current flow through a transistor to the second limit.
35. The method of claim 34 wherein the gate of the transistor is electrically coupled to a constant current source.
36. The method of claim 35 wherein the constant current source is the second limit.

37. The method of claim 30 wherein the step of providing a first current is performed by converting an input voltage to a current.
38. The method of claim 30 wherein the step of providing a first current is performed by creating a linear-in-dB current from an input voltage.
39. The method of claim 38 wherein the output current is input to a power amplifier driver.